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ABSTRACT

The purpose of this report is to provide the Ministry of Education in Ontario, Canada, with a general awareness of issues with a potential to affect education in Ontario and to provide a broad context for possible follow-up action in the organization. The report is the result of three workshops held in November, 1981, by members of the Strategic Planning Task Group (STPG) who synthesized research gathered by others involved in the project. Outlined and discussed in the report are the four main themes or areas which the group as a whole felt were strategically important. The first area is knowledge and technology. The growth of the knowledge base in the physical sciences and in math and rapid developments in technology have significantly altered the character of life of most people and have left their mark on education. The second area for strategic consideration is limits and survival. The significance of problems such as population growth, resource depletion, and environmental deterioration for strategic educational planning is examined. Congruence and accountability is the third theme discussed. The need for congruence between the needs or desires of constituencies served by the education system and the ability of that system to provide services is examined. Certain issues concerning the process of accountability are outlined. The fourth theme of the report is reconceptualization. The STPG felt that the issues identified could be best approached from a basis of reconceptualizing basic principles. (RM)

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Ontario
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Highlights of the Environmental Scanning Program 1981-82

Michael Laing

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Preface

This document, prepared by Dr. Michael Laing of the Research Branch, is an intregal part of the ministries' strategic planning for 1981-82. It highlights the results of the first stage of that process, anticipations of the future. Later steps, involving the analysis of possible effects and implications for the organization, will follow. These will involve all divisions and branches throughout the organization as part of the corporate, participatory, strategic planning process.

The images of the future, set out here in terms of major themes and related issues, are the result of work of the Strategic Planning Task Group which involved senior staff from all divisions within the ministries. These issues and themes reflect a high level of consensus among members of the Group regarding the major external factors facing education in Ontario and the work of the ministries.

I INTRODUCTION

The Strategic Planning Task Group (SPTG) undertook, as part of its environmental scan and issue management program for 1981-82, a number of general scanning projects. The objective of the program was to detect the emergence of issues with a potential to affect education in Ontario and the work of the ministries. Its purpose was to provide senior management with information that would assist them to review the present goals and positions of the ministries and develop a corporate strategy which could be reflected in divisional planning for 1982-83.

The projects covered a wide range of environments and were intended to produce information on global factors, factors affecting Canada and Ontario, and factors directly related to Ontario education. As a result, close to thirty documents or groups of documents were produced for consideration by the SPTG.

Members of the SPTG met for a three-day workshop in November 1981 to consolidate the preliminary results of this scanning activity. By means of a group synthesis process, a master list of issues (some eighty in all) was extracted from the project documents, these issues were ordered and reordered into clusters and themes, and the relative importance of the themes was assessed for follow-up by the organization. This process took place over four iterations, each of which was recorded.

This report is one of the outcomes of the SPTG workshop. It outlines the four main themes or areas which the group as a whole felt were strategically significant:

- effects of the evolving knowledge base and technological change
- limits and survival
- congruence and accountability
- reconceptualization

Within these areas, issues are elaborated in terms of trends or events, effects or needs, and implications for action. It must be stressed, however, that they are elaborated in fairly general terms; the group felt that more rigorous analysis of individual issues or themes should await feedback from the divisions and senior management. In this report, the concern of the group was to consolidate a great deal of information in such a way as to encourage more detailed responses.

The purpose of this report, then, is to provide a general awareness throughout the ministries of external factors that have implications for education in Ontario, and to provide a broad context for possible follow-up action in the organization.

II AREAS FOR STRATEGIC CONSIDERATION

1 Effects of the Evolving Knowledge Base and Technological Change

Over the last hundred years or so, the knowledge base has not only grown immensely, it has also changed. Developments in the physical sciences, in mathematics, in psychology have had profound implications for people's views of themselves, of their social relations, and of their place in the universe. Supported by rapid developments in technology, these changes have significantly altered the character of life of most people, especially in the industrialized nations; they have also inevitably left their mark on education.

1.1 Knowledge and Technology

Current trends in research and technological development promise perhaps greater impact. Neurological research, although its findings are suggestive at this stage rather than definitive, is providing information on brain functions that directly affects our understanding of the teaching-learning process and may require a complete re-evaluation of assumptions about the nature of education. Tangential to this are the effects of rapid developments in microelectronics; again, the educational implications are not yet all known, but what seems to be involved is a shift from content to pattern recognition, from information learning to information exploration, from segmented to holistic learning. As microcomputers become cheaper and more sophisticated, their use as teaching instruments will also have great implications for the relation of learner to instructor and for the role of the education institution in the teaching process. (This issue is further complicated by the fact that a generation of children brought up with microcomputers in their homes may be emerging; the effects of this may be as educationally significant as the widespread availability of television sets since the late fifties.) In the work place, the continuing trend towards automation and the associated imbalances in skills requirements impinge directly on relations between the education and labour-market systems, and seem to require both new opportunities for skills upgrading and a rethinking of the relationship between both education and work, and

leisure and work. Finally, recent discoveries in the field of genetic engineering or biotechnology pose serious ethical questions that challenge traditional views of the value of life and underscore the need for an adequate values education.

1.2 Lifelong Education

In the context of a changing labour market, where traditional skills will more and more become obsolete, where conventional means of skill training are already inadequate to the speed with which skills requirements change, and where a lack of skilled workers will inhibit our ability to compete in traditional (let alone new) markets, the development of new forms of continuous retraining and opportunities for upgrading is essential. Technological change, which contributes to the problem, can help resolve it: new modes of delivery of instruction, different forms of learning, and new ways of using institutions, or perhaps bypassing them, should be explored.

Personal enrichment and learning for leisure or for retirement are aspects of the need for lifelong learning which complement the need for continuous retraining opportunities. Current trends are towards an increased demand for non-credit courses or non-economic-driven programs, an increase in leisure time, an increase in numbers of older learners, and a continually increasing interest in self-development. To meet these needs, institutions will have to generate a broader range of programs, and develop curricula and teaching methods suitable for older learners. The relation of these new programs to the formal curriculum will have to be examined, as will the question of what sources of funding are appropriate. But a more highly educated society has the potential not only to demand but also to provide more services.

At the other end of the scale, the demand for more early childhood care and education will increase. The trend towards more women entering the work force, many out of economic necessity, will continue. To meet these needs, facilities will have to be provided, teachers and daycare workers prepared, and

traditional curricula revised. Relations between schools and and parents will require redefinition. As new knowledge of the learning process appears, schools will be able to accommodate a wider variety of initial entry behaviours. But the role of the state in providing such services - and also its responsibility - will have to be examined.

1.3 Relationship Between Education and Work

There are other aspects of the relation between education and work apart from its impact on lifelong learning. At a time when job requirements are constantly changing, when data on labour-market needs are inadequate and long-range planning impossible, an appropriate balance between education in general and training in specific skills will have to be found. To bring the supply of skills into a workable relation with demand, improved means of forecasting labour-force needs must be developed in consultation with business and industry; otherwise training will always lag behind need and produce only fresh crops of unemployables. But even with consultation, accurate forecasting is no use to a system that cannot respond; hence the need for adequate resource provisions and for the development of more flexible institutional or on-the-job training mechanisms. Moreover, since skill shortages are likely to become a trend internationally, we will no longer be able to use traditional immigration patterns to fill our need for trained workers.

If relations between education and work are not improved, several trends are likely to develop. The production of individuals who are overeducated for the job market will cause an increase in credentialism and a devaluation of attainment; those who are undertrained will simply not find work. Industries whose specific needs for skilled or highly educated workers cannot be met will lose their ability to compete; if this trend is widespread enough, serious economic dislocation could result. Public perception that education is not relevant will grow, taxpayer resistance may increase, and demand for greater accountability and for more public participation in decision making will intensify.

1.4 Value and Conceptual Change

Implicit in many of the trends noted in this section on the evolving knowledge base and technological change is the need for some form of profound re-examination of traditional values and the assumptions on which they are based. Technology affects most aspects of education, from the learning process itself to the ability of the educated person to exist productively in the work force, and its impact will only increase. The role of the teacher, the role of the teaching institution, perhaps even the role of the ministry itself in responding to technological change must be re-examined. The implications of new ways of processing information must be studied. Traditional ways of defining employment and unemployment must be rethought. The ethical problems that follow from both technological change and from new applications of technology must be confronted. And, since ethics are grounded in an individual's self-image, the impact of all these factors on the development of personality and on the functional roles available to people in the society of the late eighties and nineties must be considered.

1.5 Frequency of Change

The education system, like most systems, is structured to deal with gradual, infrequent change. But if change is, as it seems already to be, a constant, and if the speed at which change occurs will continue to increase, perhaps the most pressing and most basic need is to devise a set of attitudes and structures to which change will be no threat.

2 Limits and Survival

The trends and issues noted in this section are drawn from scans of the international and national, as well as the local, scenes. As an open, resource-exporting country, Canada is vulnerable to economic and social problems in the rest of the world that are likely to increase in the years ahead. Such problems as population growth, resource

depletion, and environmental deterioration will have great impact both on our own lives in the future and on the way we prepare our children to live their lives. Their significance for strategic planning in education is therefore unavoidable.

2.1 Third-World Poverty

Problems in relations between developed and developing countries will increase. Third-world population growth, combined with accelerating global losses in soil fertility, will lead to severe famine in less-developed countries. (At present about twelve per cent of the world's population is undernourished; apart from the human suffering involved, the physiological and psychological damage caused by such large-scale malnutrition is irreparable.) Political unrest in these countries is likely to follow from the spread, by means of cheap satellite TV, of images of Western affluence. During severe famine, illegal immigration to developed countries may occur, with major political, social, and economic upheavals as consequences. At the same time, as high aspirations to material success are challenged in the developed countries themselves by inflation and unemployment, the willingness of Northerners to limit their own aspirations is unlikely to increase. Instead, there is the possibility of large-scale diversion of taxation revenues to defence. The ministries can have little direct impact on these issues. However, they can help bring about some form of consciousness raising that stresses the interdependence of all social groups, that shows how the survival of one group depends on the survival of others; and the most fruitful place for this issue to be addressed is in redesigned curriculum guidelines.

2.2 Geographic Power Shifts

Closely related to these trends is the fact that Northern, developed countries can no longer control international affairs to the extent that they used to. An increase in world-wide instability and tension is inevitable from the proliferation of nuclear power among less-developed, often unstable nations. In economic terms, the increasing use of commodities such as oil,

grain, and copper as political weapons has serious implications for the economics of both industrialized and less-developed countries. Moreover, the establishment by multinational corporations of off-shore plants in developing countries dislocates employment patterns and economies in both developed and developing countries and adds, in turn, to the atmosphere of distrust and competitiveness between nations.

2.3 Conservation of Nonrenewable Resources

Underlying most of these issues of potential international conflict is, of course, the inescapable fact that natural resources on this planet are dwindling. This hardly needs elaboration. It is also clear that conflict is likely to escalate between those who believe the biosphere should be exploited to the full and those who see the earth as a closed ecosystem whose finite resources must be conserved and whose delicate balance must be protected from pollution. The potential for conflict between exploiting nations, which are wealthy but relatively underpopulated, and poor but overpopulated exploited nations is great.

2.4 Environmental Damage

Economic priorities continue to dominate environmental concerns in our society. As economic pressures increase, as the cost of pollution control is felt in terms of plant closings and lost jobs, this dominance is not likely to be reduced. And yet the natural environment is manifestly unable - within any meaningful time span - to regenerate itself. As groups within our society become more aware of the potential for environmental damage, dissent over current government policies is likely to increase. As dissent increases, so will the cost of, say, finding an acceptable site for disposing of industrial waste, or a viable corridor for hydro power lines. To avoid costly deadlocks between interest groups, it will be necessary to pay more attention to models of conflict resolution, to promote understanding and acceptance of the idea of trade-offs. Further, the effects of widespread environmental damage on human health, and consequently on the costs of health

care, must be understood. Even more basic is the need to revalue man's place in nature, to rethink ways of achieving both human and environmental survival.

2.5 Violence and Terrorism

Internationally, the predisposition to violence as a way of achieving political aims is on the increase. Partly as a result of conditioning by media coverage, and partly as a result of rising levels of frustration, this trend is not likely to decrease, nor are its more local or personal instances. Within the education community, examples of violence are evident in the growing incidence of vandalism and verbal or physical assaults on school staff. At a time of rapid social change, frustration and insecurity are more and more likely to find expression in violence - against institutions such as schools, and against individuals. One possible consequence of such social instability is the desire to reassert traditional forms of discipline and order, with a corresponding loss of personal freedom. A more positive, proactive response might be the evolving of new sets of values (or better ways of understanding how values may apply) or new ways of supporting individuals and groups as they try to cope with change.

2.6 Survival of the School System

As natural resources dwindle, so may financial resources for providing education services. The limits of traditional sources of revenue are in fact now apparent. Limits on the capital funds available for new construction have been established but, if the stock of aging buildings is to remain usable through the end of the century, new funds must be allocated to renovation and upgrading. Meanwhile the demand for increased services such as special education or early childhood care and education will not abate. Moreover, while the school-age population is declining, the number of people over sixty-five will grow from nine per cent to around thirteen per cent by 2000. Since, according to one writer, it costs two to three times as much to support a senior citizen as to support a school-age citizen, the competition for scarce funds between ministries will intensify. What will be

required is the development of better means of using available resources, through interjurisdictional collaboration at local and ministerial levels. The extent to which the education system needs to be involved in the real estate business - in the long-term commitment of capital and resources to developing and managing facilities - should be examined. As well, personal and communal values will have to be reassessed so that adequate and workable goals may be established.

2.7 Behavioural Tendencies

The characteristics of the generation that has been born and educated since the Second World War have been much studied. As a whole, it has received more formal education than any generation in history - an average of twelve years of schooling. It places great emphasis on its feelings, having been schooled away from the mastery of structured bodies of knowledge and towards the impulsive accumulation of experience. (John Kettle, in The Big Generation, draws an analogy between impulse buying in a supermarket and impulsive course selection.) It is strongly self-interested, not to say narcissistic, and tends to reject or be sceptical of community-based or school-imposed values. It is alienated from institutions and traditional authority structures. It has fewer inhibitions in society or in the classroom. And yet it has not been taught, or had to learn, the basic life or occupational coping skills that its parents had to master. To the extent that society will not be able to satisfy the expectations that this generation has developed, the frustrations of the young are likely to grow. They will be under stress from overcrowding at school, and in trying to get jobs. And they have not been prepared by their upbringing for the competitive, restricted situations in which they will increasingly find themselves. What seems to be required is a set of learning strategies that can capitalize on the positive characteristics of the generation - its new sensitivities, its individualism. New methods of motivation are needed, new ways of conveying the relation of choice to its consequences, new means of achieving participatory decision making.

2.8 Scale

Implicit in many of the trends noted in this section is a need for development of humanity of scale. Large bureaucracies, for example, are not noted for their ability to react quickly or sensitively to the needs of individuals or small groups. In fact they almost encourage the formation of clamorous special-interest groups which, in turn, can have the potential of damaging the interests of the silent majority. Large corporations may be able to conduct mining operations efficiently; they may be less able to provide sufficiently humane working conditions to prevent the formation of contentious and powerful unions. In either case, a sense of powerlessness seems to be the consequence for the ordinary citizen, and impotence does not seem to be the most useful base on which to build attitudes that will enable individuals to cope effectively with change.

2.9 Need for a Futures Orientation

Without a recognition that change will come, without an attempt to understand how it will come and how to prepare for it, we are bound to become victims of the future. Without a recognition of the power of change to affect our lives, we will educate more and more students for jobs they cannot do, for lives in which they will find no satisfaction. An understanding of the processes of change - as of history - will show the fundamental interconnectedness of things. To incorporate in curricula the recognition that today's decisions affect the future is to prepare students to live responsibly in the present. An explicit futures orientation in the curriculum would emphasize anticipatory rather than adaptive learning, would develop ways to deal with uncertainty and complexity, and would counter the sense of powerlessness in the face of change. Without a futures orientation, no institution can expect the people it serves to have confidence in it.

3 Congruence and Accountability

An underlying theme of many of the issues noted previously is the congruence between the needs or desires of constituencies served by the education system and the ability of that system to provide services. In this section, this theme is made more explicit, and certain issues concerning the process of accountability are outlined.

3.1 Age Structure and Demography

The effects of declining enrolment on education in Ontario have been much studied and may be quickly listed: the problem of superfluous facilities in some areas and inadequate ones where enrolment is not declining; the problem of an aging teaching staff with low morale and skills that are increasingly out of date; the difficulty and expense of retraining staff or finding alternative employment for redundant staff; the difficulty in planning to rationalize the education system to produce quality, efficiency, and effectiveness; the danger that aggregation will cover up divergent local trends and that standard policies may create harm; the increasing median age of the Ontario population, with its potential for estrangement between the taxpayer and the education system, and the increased demand for health and social services; new concerns over how to raise and allocate taxes; and the lack of opportunity for people seeking a career in education.

In global terms, of course, population growth will continue. Continual growth in third-world countries will contribute to international instability. Immigration to Ontario will not likely replace population lost by the low birth rate or interprovincial migration; however, the demand that curricula reflect the needs of a multicultural society will increase. Clearly the education system will have to rethink its mission in order to reflect the new societal structure.

3.2 Women's Roles

Another aspect of societal change is the change in women's roles. This has several aspects, all of which affect the education system. The participation of women in the work force will continue to increase. In terms of the family and parenting, role sharing will become more frequent and the demand for provision of early childhood care and education will grow; curriculum guidelines should reflect changing family structures. However, there are still manifest trends that work against the success of women in the work force. In the education system, seniority and tenure impede the progress of women. Certain consequences of declining enrolment, such as restrictions on promotion or hiring, have been shown to affect women more than men. Although bias is diminishing, severe economic constraint may bring it back. It would seem that current mechanisms for implementing policies of equality and antidiscrimination need to be strengthened.

3.3 Delivery of Services

In spite of these conditions of declining enrolment and dwindling resources, it is unrealistic to expect public demand to decline as well. In fact, what the public expects from education seems to increase continually: there are demands for increases in currently offered services, there are demands for new roles and services, and there are demands for increased accountability of the public education system, or for greater public participation in decision making.

In the face of these general demands, the ministry itself has certain specific needs: a need to develop new strategies for dealing with nontraditional groups; a need to assess the potential for commercial exploitation (of the educational market for software programs, for example) and to develop safeguards; a need to determine appropriate roles for government and the private sector in the provision of education services; and a need to determine how rapidly the ministry can - and should - respond to change.

Basic models of control and accountability (e.g., laissez-faire, centralized, mixed) have to be examined and applied sensitively to particular situations. The suitability of different models of delivery and accessibility (e.g., voucher education, private or alternative schools, storefront education, community schools) must be explored.

4 Reconceptualization

The issues outlined above may leave the reader feeling somewhat as if he were sailing into a sea of icebergs. It was clear to members of the SPTG, however, as they sketched out these issues, that although many problems lie ahead there are also opportunities. Underlying most of the issues, however they might be grouped, seemed to be a deeper need which, if addressed, could help the ministries find their way around the icebergs successfully.

This is the need -- and opportunity -- for reconceptualization. That it is a need is clear from the number of issues that seemed, as they were identified, to call for some fundamental rethinking, in terms not of operational policies and practices so much as of alternative ways of seeing things and underlying belief systems. Issues such as the nature of the teaching-learning process itself (as affected by neurological research and developments in microelectronics), the relation between leisure and work or employment and unemployment, and the ability of large institutions to respond to individuals or small groups, could be most usefully approached, it was thought, from a basis of reconceptualizing basic principles.

Evidence for current trends in reconceptualization has been accumulating from a number of sources: from scans of recent literature on future trends, from scans of leading authorities, and from scans of selected government documents. Among the documents that confirmed the significance of these trends were a review of changes in the scientific world view (by W. G. Mitchell - Occasional Paper No. 6) and a paper produced by the Ministry of Culture and Recreation, "The Elora Prescription: A Future for Recreation". Yomeji Masuda's

The Information Society, describing Japan's budgetary commitments in this area, was also influential. Sufficient confirmation of the importance of these trends was found to warrant consideration of their implications for education and the work of the ministries.

Certain aspects of this reconceptualization of basic principles are outlined below, and some of their implications for education are noted.

4.1 From Rigidity Towards Flexibility

There is a growing consensus that for many people modes of perception, forms of motivation, cultures, and even values are relative, not absolute. And yet in our decision-making processes we act in terms of formality, hierarchy, and control. In effect, our ability to respond to different expressions of need is undercut by an adherence to older institutional forms. A shift in the way problems are solved from hierarchic to consensus models would help us react supportively. Moreover, greater institutional flexibility should be paralleled by flexibility in conceptualizing. If issues such as the relation of education to work or the changing nature of the family are to be dealt with fruitfully, they must be approached in fresh, undogmatic ways.

4.2 From Fragmentation Towards Integration

For convenience, we have divided up our world into education, work, obligatory tasks, and play. In geopolitical terms we speak of "have" and "have-not" nations; locally we compare minority rights and majority needs; in economics we have consumers and conservers; and so on. And these terms are not value-free: it is clearly better, for example, to belong to a "have" class in a developed nation or, depending on one's point of view, to belong to a majority rather than a minority. Such fragmentation, of course, is the basis of strife. It produces, among other things, the growing number of special-interest groups with their vociferous assertions of rights and their sophisticated techniques for influencing decision-making. But reality is not so fragmented. In physics, for example, it is well known that many important properties of matter are consequences of the way in which the

parts of a particular piece of matter are arranged in relation to one another. The current trend, following from observations like this, is towards a more organic view of reality, one that stresses interdependence and interconnectedness. The implications for morality are profound. If we are part of whatever is around us, how can we exploit natural resources, since to do so is to exploit only ourselves? How useful are conflict models of problem solving, since the rights asserted by any one particular group are really shared by the whole? Rapid change -- the basic condition of our times -- intensifies anxiety, and anxiety feeds fragmentation and its ally, conflict. For students to be prepared to cope with change, they should learn as early as possible of the interdependence of all life, of the interrelatedness of responsibilities and rights.

4.3 From Objectivity Towards Subjectivity

We have tended to measure our well-being in terms of objective counters: so large an income, so many appliances, so great an increase in GNP. In so doing, we overlook the subjective components of our environments and our lives. But developments in the physical and social sciences, in anthropology and psychology as well as in theoretical physics, more and more call into question the validity of objectivity as a means of judgement. Institutionally, an essential challenge in post industrial Canada is to find ways of admitting the intuitive or subjective to its place in decision-making, so as to ensure that prosperity is measured in terms of human health and happiness. In the schools, students should be encouraged to see that "objective" standards or measures are not in fact value-free and that they do not themselves need absolutes. They should be helped to develop a tolerance for ambiguity, to learn that any problematic situation has more than one explanation or solution.

4.4 From Institutionalism Towards Individualism and Self-Determination

Given the complexity and changeability of modern society, there is a tendency for individuals to give up control of parts of their lives, and for institutions to take up the slack. But, for the individual, this is a false security; really all that has been gained is dependence. And for every increase in dependence there is an increase in expectation. Individuals not only have the capability but should also have the responsibility for designing and managing their lives. The ministries should examine the roles they play or are asked to play in education so that they can develop ways of delivering services which do not undercut individual responsibility.

III CONCLUSION

From so broad a survey of issues and trends, only very broad conclusions can be drawn. There are two.

The first follows from the purpose of this report. It is that this survey of highlights from the 1981-82 environmental scanning program should form part of the basis for detailed response by the divisions so that, where appropriate, more detailed study of issues can be conducted, and planning by divisions and branches can be carried on.

The second follows from the report's content. With the publication of the SERP Report, The Report of the Committee on the Future Role of Universities in Ontario, and Continuing Education: The Third System, the ministries are at a point of high opportunity. As well, with assumptions about the nature of the future converging, the means of planning for education in Ontario over the next twenty years are more and more at hand. Such an opportunity to rethink basic principles -- and put them into action -- may be unique. The future will come, whether it is planned for or not; the success with which we encounter it depends on how well our strategic reconceptualizations are carried out in the present.